

Issued on behalf of the UK CAA by the BMAA, UK CAA organisation approval ref. DAI/8909/84

TYPES:**Ikarus C42 FB80 Charlie and Ikarus C42 FB100 Charlie**

(1)	MANUFACTURER:	The Light Aircraft Company Limited - DAI/9957/14 Hangar 4, Little Snoring Airfield, Fakenham, NR21 0JL (UK type approval holder for Comco Ikarus GmbH)
(2)	UK IMPORTER:	N/A
(3)	CERTIFICATION:	BCAR Section S Issue 7
(4)	DEFINITION OF BASIC STANDARD:	Comco Masterbuild 2008 Build standard 4
(5)	COMPLIANCE WITH THE MICROLIGHT DEFINITION	
	(a) MTOW	450kg 472.5kg ¹ or TLAC TMC42-15 Mod applied.
	(b) No. Seats	2
	(c) Maximum Wing Loading	37.8 kg/m ² / 39.7 kg/m ²
	(d) V _{so}	34 kt CAS
	(e) Permitted range of pilot weights	55 – 220 kg total, Max 120 kg per seat
	(f) Typical Empty Weight (ZFW)	265 kg / 285 kg
	(g) ZFW + 172 kg crew + 1 hr fuel (10 kg C42 FB 80 & 12.5 kg C42 FB 100)	439.5 kg C42 FB80 442 kg C42 FB100
	(h) ZFW + 86 kg pilot + full fuel (65 litres / 47 kg) FB80 (100 litres / 72 kg) FB80	390.5 kg 423.5 kg
	(i) Max ZFW at initial permit issue	C42 FB80 268 kg / 290.5 kg C42 FB100 265.5 kg / 288 kg

¹ With approved Airframe Mounted Total Recovery Parachute System (AMTPRS)

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(6) POWER PLANTS

Designation	<i>C42 FB100 Charlie</i>	<i>C42 FB100 Charlie</i>	<i>C42 FB100 Charlie</i>	<i>C42 FB100 Charlie</i>
Engine Type	<i>Rotax 912 ULS</i>	<i>Rotax 912 ULS</i>	<i>Rotax 912 ULS</i>	<i>Rotax 912 ULS</i>
Reduction Gear	<i>2.43:1</i>	<i>2.43:1</i>	<i>2.43:1</i>	<i>2.43:1</i>
Exhaust System	<i>Heggerman</i>	<i>Heggerman</i>	<i>Heggerman</i>	<i>Heggerman</i>
Intake System	<i>Twin carburettor</i>	<i>Twin carburettor</i>	<i>Twin carburettor</i>	<i>Twin carburettor</i>
Propeller Type	<i>Warp Drive 3 blade</i>	<i>Neuform Fixed Pitch 3 blade</i>	<i>Neuform Variable Pitch 3 blade</i>	<i>Neuform Fixed Pitch 3 blade</i>
Propeller Dia x Pitch	<i>68" x 25° @ 400 mm radius</i>	<i>175 cm x 27° @ 310 mm from hub edge</i>	<i>180 cm x 24° to 31° @ 310 mm from hub edge</i>	<i>175 cm x 25° @ 310 mm from hub edge giving an MGRPM of 5100</i>
Max Static RPM	<i>5000</i>	<i>4800</i>	<i>5400</i>	<i>5100</i>
Noise Type Cert	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
AAN approving configuration	<i>AAN BMAA-1100 Issue 1</i>	<i>AAN BMAA-1100 Issue 1</i>	<i>AAN BMAA-1100 Issue 1</i>	<i>AAN BMAA-1100 Issue 1</i>

Designation	<i>C42 FB100 Charlie</i>	<i>C42 FB80 Charlie</i>	<i>C42 FB80 Charlie</i>
Engine Type	<i>Rotax 912 ULS</i>	<i>Rotax 912 UL</i>	<i>Rotax 912 UL</i>
Reduction Gear	<i>2.43:1</i>	<i>2.27:1</i>	<i>2.27:1</i>
Exhaust System	<i>Heggerman</i>	<i>Heggerman</i>	<i>Heggerman</i>
Intake System	<i>Twin carburettor</i>	<i>Twin carburettor</i>	<i>Twin carburettor</i>
Propeller Type	<i>Helix Prop H50F 1.75 R-S-14-3</i>	<i>Warp Drive 3 blade</i>	<i>Neuform Fixed Pitch 3 blade</i>
Propeller Dia x Pitch	<i>175 cm x 14° Fixed Pitch</i>	<i>68" x 21° @ 400 mm from hub edge</i>	<i>175 cm x 23° @ 310 mm from hub edge</i>
Max Static rpm	<i>4800</i>	<i>TBD</i>	<i>TBD</i>
Noise Type Cert	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
AAN approving configuration	<i>AAN BMAA-1100 Issue 1</i>	<i>TBD</i>	<i>TBD</i>

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(7) MANDATORY LIMITATIONS:

(a) Max Take-Off Weight		450 kg or 472.5 kg ² or TLAC TMC42-15 Mod applied.
(b) CG Limits	Aft Limit	540 mm aft of datum
	Fwd Limit	350 mm aft of datum
(c) CG datum		Wing Leading Edge
(d) Cockpit Loadings	Total	
	Min	55 kg
	Max	220 kg
		Max 120 kg per seat
	Baggage	10kg (with mod embodied)
(e) Never Exceed Speed		144 mph (125 kt) IAS 103 mph (90 kt) IAS Flying Without Doors
(f) Manoeuvring Speed		94 mph (82 kt) IAS 80 mph (70 kt) IAS Flying Without Doors
(g) Permitted Manoeuvres		Maximum bank angle 60° Non Aerobatic Normal acceleration limits, +4g / -2g
(h) Fuel Contents (Max Usable)		65 litres (Aerosport Mod C42/011) 100 litres (Aerosport Mod C42/005)

² With approved Airframe Mounted Total Recovery Parachute System (AMTPRS)

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(i) Power Plant

Engine	Rotax 912 UL	Rotax 912 ULS
Max RPM	5800 (5 min) 5500 (continuous)	5800 (5 min) 5500 (continuous)
MAX Coolant Temp.	120 °C	120 °C
MAX EGT	880 °C	880 °C
Fuel Spec	90 RON minimum unleaded to EN 228 Normal, Super or Super Plus, AVGAS 100LL, UL91. (Unleaded preferred – see engine manual)	95 RON minimum unleaded to EN 228 Super or Super Plus, AVGAS 100LL, UL91. (Unleaded preferred – see engine manual)
Engine Oil Spec	RON 424, SAE 10 W-40 (See engine manual)	RON 424, SAE 10 W-40 (See engine manual)
Oil Pressure	Normal 2-5 bar above 3500rpm Min 0.8 bar below 3500rpm Max 7 bar	Normal 2-5 bar above 3500rpm Min 0.8 bar below 3500rpm Max 7 bar
Oil Temperature	50 °C -140 °C	50 °C - 130 °C
Fuel Pressure	0.15 - 0.5bar with fuel pump S/N 11.0036 or later	0.15 - 0.5bar with fuel pump S/N 11.0036 or later

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(8) INSTRUMENTS REQUIRED:

ASI	Altimeter	RPM	Coolant Temperature	Oil Temperature	Oil Pressure	Compass	VSI	Slip ball
Required (0 to 150 mph / 130 kt min.)	Required	Required 0-6000 rpm	Required	Required	Required	Optional	Optional	Required

(9) CONTROL DEFLECTIONS:

Elevator UP:	30° ± 3°	Tailplane trim tab UP:	1° to 5° (relative to elevator)
Elevator DOWN:	20° ± 3°	Tailplane trim tab DOWN:	25° ± 3° (relative to elevator)
Ailerons UP:	20° ± 2°	Rudder LEFT:	32° ± 3°
Ailerons DOWN:	14° ± 2°	Rudder RIGHT:	32° ± 3°
Aileron SPADES:	Refer to POH	Balance Tab	0° ± 2° (with elevator neutral)
Flaps (DOWN):	4.5°, 15° and 42° (relative to the fuselage tube)		

(10) PILOT'S NOTES, MAINTENANCE MANUALS REFERENCES:

10.1 Manuals approved for use with this aircraft

(a) C42C Owner's Manual OHB/C42/002 Issue 2, or later approved version

(b) Maintain to Pilot Operators Handbook.

(c) Engine, propeller, parachute system and other fitted equipment manufacturer's Operating and Maintenance Manuals as appropriate to fitted powerplant and equipment, at their current issues.

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10.2 The following placards are to be fitted:

- (a) Flight Limitations Placard (to be visible to the pilot)
Contains airspeed, manoeuvring and loading limitations. See Pilot Operators Handbook.
- (b) Engine Limitations Placard (to be located near to the engine instruments)
A placard showing the limitations for all indicated engine parameters is to be mounted close to the engine instruments. Also, main limitations are to be shown as coloured markers (red for danger, amber for caution) on the instrument displays. See Pilot Operators Handbook.
- (c) Occupant Warning Placard (to be visible to both occupants)
See Pilot Operators Handbook.
- (d) Fuel Filler Placard (to be located adjacent to the fuel filler cap)
A placard is to be fitted showing fuel capacity, fuel type(s), and if MTOW can be exceeded with full fuel and 180kg cockpit weight, the fuel loads at MTOW for cockpit weights of 180kg / 170kg / 160kg etc. at 10kg intervals down to the maximum fuel load. See Pilot Operators Handbook.
- (e) Parachute Warning Placards (to be located on the exterior of the aircraft)
If an Airframe Mounted Total Recovery Parachute System (AMTPRS) is fitted, placards complying with BCAR Section S Issue 7 must be fitted. See Pilot Operators Handbook.
- (f) Secondary Control Markings
Choke, cabin heat, trim, flaps, fuel shut-off: see Pilot Operators Handbook.
Other secondary controls are to be placarded as per the associated Pilot Operators Handbook supplement or normal aviation practice (if no associated Pilot Operators Handbook supplement).
- (g) ASI Markings
See Pilot Operators Handbook.
- (h) Switches
All switches are to be marked with function and sense (up=on, down=off).
- (i) Fuses and Circuit Breakers
All fuses and circuit breakers are to be marked with function and rating.
- (j) Fireproof Metal Plate
Showing the aircraft nationality and registration marks (e.g. G-ABCD) to be mounted in a prominent position on the fuselage.



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(11) MANDATORY MODIFICATIONS / SERVICE BULLETINS / AIRWORTHINESS DIRECTIVES ETC:

See Annex A for required modifications.

Annual Bettometer Test

Stitching only: 1000 grammes using a 1.2mm diameter hook, pull at 90deg to surface of tensioned sail.

(12) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT (450 kg – ISA – Sea Level)

Rate of Climb:	C42 FB80	700 fpm at 69 mph (60 kt) IAS.
	C42 FB100	1000 fpm at 69 mph (60 kt) IAS.
Stall or Minimum Flying Speed:	36 mph (31 kt) IAS at MTOW / idle / full flap.	
Sink rate	700 fpm	
TODR (on short dry grass)	205m (includes 1.3 safety factor)	
LDR (on short dry grass)	205m (no safety factor)	

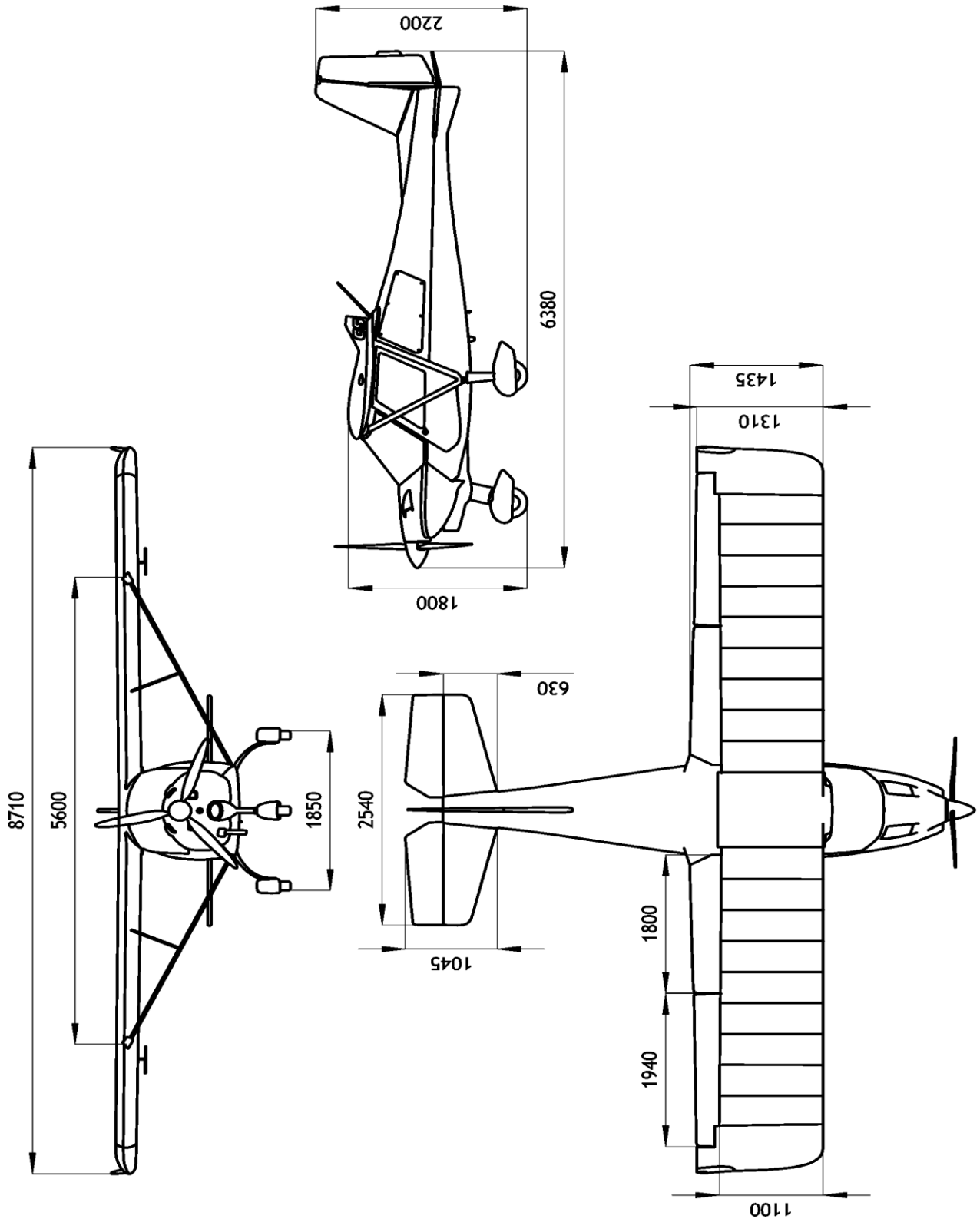
Issue History

<u>Issue</u>		<u>Reason and Signatory</u>
1	18/12/2020	Initial issue. Approved for issue by R. Patrick BMAA Chief Technical Officer
2	29/11/2021	Modification TMC42-15 Operation at 472.5kg without BPRS added. POH / MM Issue 2 added. SBs added. Approved for issue by R. Patrick BMAA Chief Technical Officer

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Illustration of Aircraft - 3 View



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ANNEX A – MANDATORY MODIFICATIONS / SERVICE BULLETINS

CAA Mandatory Permit Directives (AIRFRAME ONLY)

2004-005 R1	Elevator Horn Cracking
2004-013	Stub Axle Shock Absorber Attachment Cracking
2007-007	Fouling of Rear Fuselage Composite Fairing on Rudder Horn Bolts
2007-008	Cracking in Weld on Wing Root Rib
2016-004-E	Inspection of Main Fuselage Tube for Cracking
2016-006-E	Inspection of Neuform Prop Hub for Cracking
2019-005³	Placarding Requirements for Aircraft fitted with a BPRS 4 (for more info see TIL063)

Manufacturer Essential Service Bulletins

Flybuy Ultralights	OSB 16	Elevator Horn Cracking
Flybuy Ultralights	OSB 18	Stub Axle Cracking
Aerosport Ltd	OSB 24	Rudder Horn Bolt Clearance
Aerosport Ltd	OSB 25	Wing Root Rib Weld Cracking
Red Aviation	OSB 29	Main Fuselage Tube Cracking
Red Aviation	OSB 30	Neuform Prop Hub Cracking
Red Aviation	OSB 31	Inspection of inside of A-strut for cracking
TLAC	OSB 32	Inspection of nosewheel steering pushrods
TLAC	OSB 33	Inspection of control surface hinge and horn attachments for corrosion or cracking

Latest Bulletins - <https://www.g-tlac.com/login/> (User Name: **G-WOLV** Password: **BMAA**)

ANNEX B - APPROVED OPTIONAL MODIFICATIONS

The installation of all optional modifications is to be inspected by an inspector from an Organisation approved by the CAA for the purpose and an entry made in the appropriate logbook(s). Note that other approved modifications may exist which are not listed here.

Flybuy/Aerosport Optional Modifications

1.	Landing Light	42UKA11.10.00
2.	Strobe	42D03.05.00
3.	Falcon Artificial Horizon	C42/003
4.	Samsonite Luggage Case	C42/004
5.	Additional 50 Litre Fuel Tank	C42/005

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- | | | |
|----|-----------------------|---------|
| 6. | Vertical Card Compass | C42/012 |
| 7. | Flying Without Doors | C42/019 |

Performance Aviation Optional Modifications

- | | | |
|----|-----------------------|-------------|
| 8. | BRS Reserve Parachute | C42PAUK/003 |
| 9. | Beringer Brakes | C42PAUK/004 |

Red-Air / Red Aviation Optional Modifications

- | | | |
|-----|--|------------|
| 10. | FUNKE ATR833 Radio | C42RAUK/02 |
| 11. | FUNKE TRT800H Transponder | C42RAUK/03 |
| 12. | Sailplane Tow Kit | C42RAUK/12 |
| 13. | Electric Flaps | C42RAUK/19 |
| 14. | Dual 65 Litre Fuel Tank (Max limit 100 Litres) | C42RAUK/22 |

TLAC Optional Modifications

- | | | |
|-----|---|----------|
| 15. | Rudder Pedal Extensions | TMC42-3 |
| 16. | BRS-5-1050 Parachute | TMC42-11 |
| 17. | Strut Mount Repair | TMC42 12 |
| 18. | Radio Equipment (Radio, Transponder, ADS-B, PilotAware) | TMC42-13 |
| 19. | Operation at 472.5kg without a BPRS | TMC42-15 |

ANNEX C - WEIGHING INFORMATION

- | | | |
|-----|-----------------------|---|
| 1. | CG Datum: | Wing Leading Edge |
| 2. | Weighing attitude: | Stabiliser horizontal |
| 3. | Mainwheel moment arm: | 770 mm aft of datum (<i>or factory measurement</i>) |
| 4. | Nosewheel moment arm: | 770 mm forward of datum (<i>or factory measurement</i>) |
| 5. | Fuel moment arm: | 950 mm aft of datum |
| 6. | Crew moment arm: | 400 mm aft of datum |
| 7. | Baggage moment arm: | 950 mm aft of datum |
| 8. | Crew weights: | Minimum 55 kg / maximum 220 kg |
| 9. | Aft CG Limit: | 540 mm aft of datum |
| 10. | Fwd CG Limit: | 350 mm aft of datum |

ANNEX D – EXAMPLE PLACARDS

See Pilot Operating Handbook (POH)



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ANNEX E – POINTS FOR SPECIAL ATTENTION

Tyre Pressures

Main wheels 1.8 - 2.5 bar 26 to 36 psi.

Front wheel 1.5 - 1.8 bar 22 to 26 psi.

Shock absorbers – **DO NOT** attempt to adjust, contact TLAC for help as special equipment is required!

Annual Bettometer Test

Stitching only: 1000 grammes using a 1.2mm diameter hook, pull at 90deg to surface of tensioned sail.

Baggage Allowance

10kg using approved modification (Samsonite Case or TLAC Basket), weight report and CG to be checked before use.